

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

SCHEDULE 14A

PROXY STATEMENT PURSUANT TO SECTION 14(a) OF THE SECURITIES
EXCHANGE ACT OF 1934 (AMENDMENT NO.)

Filed by the Registrant [X]

Filed by a Party other than the Registrant []

Check the appropriate box:

- [] Preliminary Proxy Statement
 [] CONFIDENTIAL, FOR USE OF THE COMMISSION ONLY (AS PERMITTED BY RULE
14A-6(E)(2))
 [X] Definitive Proxy Statement
 [] Definitive Additional Materials
 [] Soliciting Material Pursuant to Sec.240.14a-12

APA Optics, Inc.

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- [X] No fee required
 [] Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

1) Title of each class of securities to which transaction applies:

2) Aggregate number of securities to which transaction applies:

3) Per unit price or other underlying value of transaction computed
pursuant to Exchange Act Rule 0-11 (set forth the amount on which the
filing fee is calculated and state how it was determined):

4) Proposed maximum aggregate value of transaction:

5) Total fee paid:

[] Fee paid previously with preliminary materials.

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0-11(a)(2) and identify the filing for which the offsetting fee was paid
previously. Identify the previous filing by registration statement number,
or the Form or Schedule and the date of its filing.

1) Amount Previously Paid:

2) Form, Schedule or Registration Statement No.:

3) Filing Party:

4) Date Filed:

NOTICE OF ANNUAL MEETING OF SHAREHOLDERS

TO OUR SHAREHOLDERS:

The 2004 Annual Meeting of the shareholders of APA Optics, Inc., a Minnesota corporation (the "Company"), will be held at the Four Points Sheraton, 1330 Industrial Boulevard, Minneapolis, Minnesota 55431, on August 19, 2004, at 3:30 p.m., Central Daylight Time, to consider and vote upon the following matters:

1. Election of five directors.
2. Amendment of the Articles of Incorporation to change the name of the Company to APA Enterprises, Inc.
3. Such other business as may properly come before the meeting or any adjournment or adjournments thereof.

We have fixed the close of business on July 6, 2004, as the record date for the determination of shareholders entitled to notice of and to vote at the Annual Meeting. Our transfer books will not be closed.

Whether or not you expect to be present personally at the Annual Meeting, please complete, date, sign, and return the accompanying Proxy in the enclosed, self-addressed envelope at your earliest convenience. This will insure your participation in the decisions to be made by the shareholders. We sincerely hope that all shareholders who can attend the Annual Meeting will do so.

BY ORDER OF THE BOARD OF DIRECTORS

Kenneth A. Olsen
Secretary

July 12, 2004

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APA OPTICS, INC.
2950 N.E. 84TH LANE
BLAINE, MINNESOTA 55449

PROXY STATEMENT
FOR ANNUAL MEETING OF SHAREHOLDERS
AUGUST 19, 2004

SOLICITATION AND REVOCATION OF PROXIES

The accompanying Proxy is solicited by the Board of Directors of APA Optics, Inc. (the "Company") in connection with the 2004 Annual Meeting of the

Shareholders of the Company, to be held on August 19, 2004, at 3:30 p.m. Minneapolis time, at the Four Points Sheraton, 1330 Industrial Boulevard, Minneapolis, Minnesota 55431 and any adjournments thereof. This Proxy Statement is first being mailed to shareholders on or about July 12, 2004.

HOW TO VOTE

- By signing and returning the enclosed proxy card, you will be giving your proxy to our board of directors and authorizing them to vote your shares.

HOW YOUR PROXY WILL BE VOTED

- Unless revoked, all properly executed Proxies will be voted as specified. Proxies that are signed but that lack any specification will, subject to the following, be voted FOR all nominees for director and FOR changing the name of the Company. If any other matters properly come before the Annual Meeting, or if any of the persons named to serve as directors should decline or be unable to serve, the persons named in the Proxy will vote in accordance with their discretion.

HOW TO REVOKE YOUR PROXY

- You have the power to revoke your proxy at any time before the convening of the Annual Meeting. Revocations of proxy will be honored if received by us, at the Company, addressed to the attention of Anil K. Jain, on or before August 18, 2004. In addition, on the day of the meeting, prior to the convening thereof, revocations may be delivered to the tellers who will be seated at the door of the meeting room.

ABSTENTIONS

- If you abstain from voting as to any matter, your shares shall be deemed present at the meeting for purposes of determining a quorum and for purposes of calculating the vote with respect to such matter, but shall not be deemed to have been voted in favor

of such matter. Abstentions, therefore, as to any proposal will have the same effect as votes against such proposal.

BROKER NON-VOTES

- If a broker turns in a "non-vote" Proxy, indicating a lack of voting instruction by the beneficial holder of the shares and a lack of discretionary authority on the part of the broker to vote on a particular matter, then the shares covered by such non-vote Proxy will be considered present at the meeting for purposes of determining a quorum but will not be considered to be represented at the meeting for purposes of calculating the vote required for approval of such matter.

COST OF SOLICITATION

- We will pay all expenses in connection with the solicitation of proxies. Proxies are being solicited primarily by mail, but officers, directors, and other employees of the Company may also solicit proxies by telephone, telegraph, or personal calls. No extra compensation will be paid by us for such solicitation. We may reimburse brokers, banks, and other nominees holding shares for others for the cost of forwarding proxy materials to, and obtaining proxies from, their principals.

BOARD RECOMMENDATIONS

The Board of Directors unanimously recommends that you vote FOR election of each nominee and FOR the change of name of the company.

VOTING RIGHTS

Only shareholders of record at the close of business on July 6, 2004, are entitled to notice of and to vote at the meeting or any adjournment thereof. As of that date, we had issued and outstanding 11,872,331 shares of common stock. Each holder of record of our common stock is entitled to one vote for each share registered in the shareholder's name as of the record date. The Articles of Incorporation of the Company do not grant the shareholders the right to vote cumulatively for the election of directors. No shareholder will have appraisal rights or similar dissenter's rights as a result of any matters expected to be voted on at the meeting.

The presence in person or by proxy of holders of a majority of the shares of common stock entitled to vote at the Annual Meeting will constitute a quorum for the transaction of business.

OWNERSHIP OF COMMON STOCK

The following table shows as of July 6, 2004, the stock ownership of (i) all persons known by us to be beneficial owners of more than five percent of our outstanding shares of common stock, (ii) each director and each nominee for election as a director, (iii) the Named

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Executive Officers (as defined below under the caption "EXECUTIVE COMPENSATION"), and (iv) all current directors and executive officers as a group:

<TABLE>

<CAPTION>

| Name and Address of Beneficial Owner | Number of Shares Beneficially Owned | Percentage of Outstanding Shares |
|---|-------------------------------------|----------------------------------|
| ----- | ----- | ----- |
| <S> | <C> | <C> |
| Anil K. Jain 2950 N.E. 84th Lane Blaine, Minnesota 55449 | 1,670,502 (1) | 14.1 |
| Kenneth A. Olsen 2950 N.E. 84th Lane Blaine, Minnesota 55449 | 742,832 (2) | 6.3 |
| Cheri Podzimek 5480 Nathan Lane Plymouth, Minnesota 55442 | -0- | * |
| Herman Lee 20152 Highway 9N Borup, Minnesota 56519 | 761,700 | 6.4 |
| John G. Reddan 1950 Ridgewood Avenue White Bear Lake, MN 55110 | 11,000 (3) | * |
| Ronald G. Roth 19 East Oaks Road North Oaks, MN 55127 | 334,800 (3) | 2.8 |
| Stephen A. Zuckerman, M.D. 2828 Kenwood Isles Drive Minneapolis, MN 55408 | 23,000 (3) | * |
| All current directors and executive officers as a group (6 persons) | 2,782,134 (3) (4) | 23.4 |

<FN>

* Less than 1%.

- (1) Includes 5,250 shares held by Dr. Jain as custodian for minor relatives. Dr. Jain disclaims beneficial ownership of such shares.
- (2) Includes 19,332 shares held in trusts for Anil K. Jain's children, of which Mr. Olsen serves as trustee. Mr. Olsen disclaims beneficial ownership of such shares.
- (3) Includes 5,000 shares that may be acquired upon exercise of options that are or will become exercisable within sixty days of the record date.
- (4) Includes 15,000 shares that may be acquired upon exercise of options that are or will become exercisable within sixty days of the record date.

</TABLE>

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PROPOSAL NO. 1
ELECTION OF DIRECTORS

Our Nominating Committee has named the individuals listed below for election as directors, each to serve until the next annual meeting of the shareholders and until his successor is elected and qualified or until his earlier resignation or removal. All of the nominees are currently directors.

Unless instructed not to vote for the election of directors or not to vote for any specific nominee, your proxy will be voted to elect the listed nominees. If any nominee withdraws as a candidate or is otherwise unavailable to stand for election at the meeting, the named proxies will vote for such other persons as they may determine, in their discretion. We do not anticipate that any candidate will withdraw.

The following information is provided with respect to the nominees for directors:

| Name ---- | Age --- | Director Since ----- |
|----------------------------|------------|-------------------------|
| Anil K. Jain | 58 | 1979 |
| Kenneth A. Olsen | 60 | 1980 |
| Ronald G. Roth | 59 | 2002 |
| Stephen A. Zuckerman, M.D. | 62 | 2002 |
| John G. (Jack) Reddan | 74 | 2002 |

Dr. Anil K. Jain has been president of the Company since 1979, Chairman of the Board since 1987, and Chief Executive Officer since 1988. He also currently serves as Chief Financial Officer. Dr. Jain is a past director and former chairman of Minnesota Project Innovation, Inc., a nonprofit corporation.

Kenneth A. Olsen has been secretary of the Company since 1983. From 1992 through 2003 he also served as vice president in charge of the Company's optics fabrication operations. Prior to joining the Company in 1979, Mr. Olsen had been employed at 3M since 1966.

Ronald G. Roth was Chairman of the Board and Chief Executive Officer of Waste Systems Corp., a privately held waste hauling and disposal company, for 25 years prior to its sale to a national waste management company in 1995. From 1995 to 2001, he was Chairman of the Board of Access Cash International L.L.C., a North American provider of ATMs and related processing and financial services until its sale to a national payment and technology solutions company. Since 1990 he has been an owner of, and has served in various capacities, including director and officer, with Phillips Recycling Systems, a privately held regional recycling service provider in Minnesota. Mr. Roth graduated with a B.A. in Marketing from Michigan State University.

Dr. Stephen L. Zuckerman served as a director of the Company from January 1986 through August 1991 and was reappointed to the Board in February 2002. Dr. Zuckerman is Chief of Internal Medicine at Aspen Medical Group East Lake Street Clinic, and in addition, has

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been actively involved for many years with developing companies in the high tech area. He served as chairman of the board of ProtaTek International Inc., a biotechnology company manufacturing for the human and veterinary marketplace, from 1984 to 1987, as co-founder and chairman of the board of Hypertension Diagnostic Inc., also a biotechnology company that has developed a methodology for early detection of blood vessel disorders, from 1988 to 1991, and as a member of the board of Biosensor Inc. (1989 to 1991) and Micromedics Inc. (1986 to 1991 and February 2002 to present). From 1982 to 1995, Dr. Zuckerman was president of M-T Venture Capital Fund, Inc., a Minnesota corporation created to invest in early-stage biotechnology and medical technology companies. Since 1976, Dr. Zuckerman has consulted in the health care delivery field, focusing his efforts on the regionalization of health care services. He was the designer, founder and director of the University of Minnesota Hospitals' Outreach Program from 1976 to 1984. Besides his internal medicine practice, Dr. Zuckerman presently is chairman of the board of The Foundation for Rural Health Care, a nonprofit organization that owns and manages three rural nursing homes, and a member of the board of Micromedics, Inc. He is also president of M-T Venture Capital Fund II, Inc. and chairman of the board of The University Film Society, Minneapolis, Minnesota (2000 to present).

John G. (Jack) Reddan joined the Board of Directors in November 2002. Mr. Reddan, retired, has worked as a volunteer with the Presbytery of the Twin Cities Area (Presbyterian Church USA) in computer application, hardware and software support, and accounting and finance. From 1992 to 1994, immediately following his retirement for Unisys Corp., he worked as a volunteer with the Presbyterian Border Ministries in McAllen, Texas in multiple capacities, including accounting consulting, which he continued until 1999. His last position at Unisys (1986 until retirement in 1991) was as Program Manager - Communication Systems, where he was responsible for budgets, procurement, and administration of hardware and software development. During his career with Unisys (then known as Sperry Univac) he served as General Manager of its division in Brazil (1970-1973) and as European regional manager for sales to the U.S. government and military in Frankfurt, Germany (1967-1969).

Board Meetings. The Board of Directors held 6 meetings during fiscal 2004. All directors attended at least 85% of the meetings of the Board of Directors and of each committee on which they served.

COMMITTEES

The Company has an audit committee, a compensation committee, and a nominating committee, each of which is comprised of all non-employee (outside directors). The members of these committees during fiscal 2004 were as follows:

| Audit Committee ----- | Compensation Committee ----- | Nominating Committee ----- |
|--------------------------|---------------------------------|-------------------------------|
| Ronald Roth | Ronald Roth, Chairman | Ronald Roth, Chairman |

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Audit Committee. The audit committee has sole authority to appoint, review and discharge our independent auditors. The committee also reviews and approves in advance the services provided by the independent auditors, oversees the internal audit function and reviews our internal accounting controls. The audit committee operates under a written charter adopted by the Board of Directors. All members of the Audit Committee are "independent" under the current Nasdaq stock market listing standards. The Board has identified John G. Reddan as the current member of our Audit Committee who meets the definition of an "Audit Committee Financial Expert" recently established by the Securities and Exchange Commission ("SEC"). During fiscal 2004, the Audit Committee held 3 meetings. See "RELATIONSHIP WITH INDEPENDENT AUDITORS - Report of Audit Committee" below.

Compensation Committee. The compensation committee develops general compensation policies and establishes compensation plans and specific compensation levels for executive officers. The compensation committee met once during fiscal 2004 to consider the compensation of the executive officers. See "EXECUTIVE COMPENSATION - Report of Compensation Committee" below.

Nominating Committee. The nominating committee selects nominees for election as directors of the Company. The nominating committee was formed on May 27, 2004 and has met once, at which time it selected nominees for election at the upcoming annual meeting. The nominating committee will consider qualified director nominees recommended by shareholders for election in 2005 and beyond. Our process for receiving and evaluating Board member nominations from our shareholders is described below under the caption "Nomination of Director Candidates."

Compensation of Directors. Each director who is not also an employee of the Company receives an annual director's fee of \$5,000 and \$500 for each Board or committee meeting attended (subject to a maximum of \$500 per day). We paid a total of \$26,500 in directors' fees for services rendered during fiscal 2004. We have discontinued the \$500 meeting fee effective with the annual meeting in 2004.

In addition, under the terms of our Stock Option Plan for Nonemployee Directors, each director who is not otherwise an employee of the Company receives annually, on the first business day following the annual shareholders' meeting or, if earlier, on September 1, an option to purchase 5,000 shares of common stock. The exercise price for the option equals the fair market value of the stock on the date of grant. Each option becomes exercisable on the earlier of the date of the next annual shareholders' meeting or one year from the date of grant and is exercisable for a period of four years thereafter. During fiscal 2004, options to purchase 15,000 shares at \$2.91 per share were awarded to nonemployee directors pursuant to this Plan.

CODE OF ETHICS

The Company has adopted a code of ethics applicable to its chief executive officer and senior financial officers. The code is available at no charge by request to the Company in writing, to the attention of the Comptroller. Additionally, the code is filed with the Securities

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and Exchange Commission as an exhibit to the Company's Report on Form 10-KSB for the fiscal year ended March 31, 2004 and is available on our website (www.apaoptics.com).

NOMINATION OF DIRECTOR CANDIDATES

Effective May 27, 2004, the Board of Directors appointed a standing nominating committee for selection of nominees for election to the Board of Directors. The committee's charter is available on our website (www.apaoptics.com) or by request in writing to the Company, to the attention of the Comptroller.

The nominating committee determines the required selection criteria and qualifications of director nominees based upon the needs of the Company at the time nominees are considered. In general, at a minimum, a candidate must possess the ability to apply good business judgment and must be in a position to properly exercise his or her duties of loyalty and care. In addition, the committee evaluates candidates based on financial literacy, knowledge of the Company's industry or other background relevant to the Company's needs, status as a shareholder in the Company, "independence" for purposes of compliance with the rules of the SEC and the Nasdaq Stock Market ("Nasdaq"), and willingness, ability, and availability for service. Candidates will be preferred who hold an established executive level position in business, finance, law, education, research or government. When current Board members are considered for

nomination for reelection, the nominating committee also takes into consideration their prior APA Board contributions, performance and meeting attendance records.

The nominating committee has not utilized the services of any third party search firm to assist in the identification or evaluation of Board member candidates. However, the committee may engage a third party to provide such services in the future, as it deems necessary or appropriate at the time in question.

The nominating committee will consider qualified candidates for possible nomination that are submitted by our shareowners. Shareholders who wish to make such a submission may do so by sending the following information to the nominating committee c/o APA Optics, Inc., Attn: Comptroller, at the Company: (1) name of the candidate and a brief biographical sketch and resume; (2) contact information for the candidate and a document evidencing the candidate's willingness to serve as a director if elected; (3) a signed statement as to the submitting shareholder's current status as an owner and the number of shares currently held. Nominations are further subject to the requirements of Section 2.14-a of the Company's Bylaws. Our Bylaws are available on our website (www.apaoptics.com) or by request in writing to the Company (Attn: Comptroller).

This information will be evaluated against the criteria established by the committee and the specific needs of the Company at that time. Based upon such preliminary assessment, candidate(s) who appear best suited to meet the needs of the Company may be invited to participate in a series of interviews, which are used as a further means of evaluating potential candidates. On the basis of information learned during this process, the committee will determine which nominee(s) to propose for election at the next annual meeting. The committee will use the same process for evaluating all nominees, regardless of the source of the nomination.

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No candidates for director nominations were submitted to the committee by any shareholders in connection with the 2004 annual meeting. Any shareholders desiring to present a nomination for consideration by the Committee prior to our 2005 annual meeting must do so at least 90 days prior to the one year anniversary of this year's annual meeting (i.e. 90 days prior to August 19, 2005), as required by Section 2.14-a of our Bylaws.

SHAREHOLDER COMMUNICATION WITH THE BOARD

We do not have a formal procedure for shareholder communication with our Board of Directors. Any matter intended for the Board, or for any individual member or members of the Board, should be directed to our Comptroller at the Company address with a request to forward the same to the intended recipient. All such communications will be forwarded unopened.

We encourage all incumbent directors, as well as all nominees for election as director, to attend the annual meeting of shareholders. All incumbent directors and nominees attended the annual meeting in August 2003.

EXECUTIVE COMPENSATION

Summary Compensation Table. The following table sets forth certain information regarding compensation paid during each of our last three fiscal years to our chief executive officer and our other executive officers whose annualized compensation in fiscal 2004 (based on salary and bonus) exceeded \$100,000 (the "Named Executive Officers").

<TABLE>

<CAPTION>

| Name Principal Positions | Fiscal Year | Annual Compensation | | All Other Compensation |
|---------------------------------------|----------------|---------------------|--------------|---------------------------|
| | | Salary | Bonus | |
| <S> | <C> | <C> | <C> | <C> |
| Anil K. Jain | 2004 | \$ 183,600 | 0 | \$ 8,084 |
| President and Chief Executive Officer | 2003 | \$ 186,831 | 0 | \$ 5,506 |
| | 2002 | \$ 179,790 | \$20,000 (1) | \$ 8,758 (2) |
| Cheri B. Podzimek(3) | 2004 | \$ 78,208 | 0 | \$ 711(4) |
| President, APACN | | | | |

<FN>

- (1) Bonus for fiscal year 2001, paid in fiscal year 2002.
- (2) Consists of Company contribution on Dr. Jain's behalf to 401(k) plan and an auto allowance.
- (3) Ms. Podzimek joined the Company on June 27, 2003. Information in the table reflects compensation for the period from June 27, 2003 through March 31, 2004.
- (4) Consists of Company contribution on Ms. Podzimek's behalf to 401(k) plan.

</TABLE>

Change of Control Arrangement. We have an agreement with Anil K. Jain providing for certain benefits in the event of a change in control of the Company. If, following a change in control (as defined in the agreement), Dr. Jain's employment is terminated within 36 months other than for "cause" (as defined) or as a result of his retirement, disability, or death, or if Dr. Jain terminates his employment for "good reason" (as defined), he is to receive a lump sum payment equal to two and one-half times his annualized includable compensation for the base

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period (as defined in Section 280G(d) of the Internal Revenue Code of 1986, as amended). "Good reason" includes certain changes in Dr. Jain's duties, responsibilities, status, salary, benefits, and other similar terms of his employment made without his consent. A "change in control" for purposes of the agreement includes a consolidation or merger of the Company in which the Company is not the continuing or surviving corporation, any sale, lease, exchange, or transfer of all or substantially all of the assets of the Company, approval by the shareholders of any plan or proposal for liquidation or dissolution of the Company, the acquisition by any person (as such term is used in Sections 13(d) and 14(d)(2) of the Securities Exchange Act of 1934, as amended) of beneficial ownership of 30% or more of the Company's outstanding common stock, or a change in the board of directors of the Company during any period of two consecutive years such that individuals who at the beginning of such period constituted the entire Board of Directors cease for any reason to constitute a majority (with certain exceptions).

In addition, we have an agreement with Dr. Jain providing that upon the occurrence of a change in control, in conjunction with a change in Dr. Jain's current position, other than by voluntary resignation, Dr. Jain will have the option to request the Company to purchase from him a number of shares of his common stock equal to up to 4% of the shares of common stock outstanding immediately prior to the change in control at a price per share equal to the highest per share price paid in connection with the change in control event or the highest price paid in the public market within the twelve months preceding Dr. Jain's exercise of the option. This option is effective for a period of twelve months after the change in control.

OPTION GRANTS IN LAST FISCAL YEAR

The following table contains information concerning individual grants:

<TABLE>
<CAPTION>

| Individual Grants | | | | | Grant Date |
|-------------------|--|---|--------------------------------|-----------------|-----------------------------|
| | | | | | Value |
| Name | Number of Securities Underlying Options/SARs Granted (#) | Percent of Total Options/SARs Granted to Employees in Fiscal Year | Exercise of Base Price (\$/Sh) | Expiration Date | Grant Date Present Value \$ |
| <S> | <C> | <C> | <C> | <C> | <C> |
| Cheri B. Podzimek | 35,000 | 25% | 2.55 | 10/30/09 | \$ 56,350 (1) |

</TABLE>

(1) Based upon the Black Scholes valuation method. Assumptions used include an expected term of 5 years, risk-free interest rate of 3.3%, dividend yield of zero, and historical volatility of 75%.

AGGREGATED OPTION EXERCISES IN LAST FISCAL YEAR AND FISCAL YEAR-END OPTION VALUES

The following table provides information relating to option exercises during fiscal 2004 and the number and value of shares of common stock subject to options held by the Named Executive Officers as of March 31, 2004.

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<TABLE>
<CAPTION>

| Shares Acquired on | Number of Shares Underlying Unexercised Options at Fiscal Year-End | Value of Unexercised In-the-Money Options at Fiscal Year End |
|--------------------|--|--|
| | | |

| Name | Exercise | Value Realized | Exercisable | Unexercisable | Exercisable | Unexercisable |
|-------------------|----------|----------------|-------------|---------------|-------------|---------------|
| <S> | <C> | <C> | <C> | <C> | <C> | <C> |
| Anil K. Jain | -0- | -0- | -0- | -0- | -0- | -0- |
| Cheri B. Podzimek | -0- | -0- | -0- | 35,000 | -0- | -0- |

REPORT OF THE COMPENSATION COMMITTEE

Compensation Policy. In determining the Company's executive compensation policy and levels, the compensation committee seeks to attract and retain qualified executive officers, motivate executive officers to improve the Company's performance, and reward executive officers for individual contributions to the achievement of the Company's business objectives. The committee attempts to achieve these goals by combining annual base salaries with bonuses based on corporate performance and on the achievement of specified performance objectives. The compensation committee believes that cash compensation in the form of salary and bonus provides executives with short-term rewards for success in operations. The compensation committee also believes that long-term compensation through the award of stock options encourages growth in management stock ownership which leads to expansion of management's stake in the long-term performance and success of the Company.

Base Salary. In determining the base salary of each of the executive officers, the Company relies on information regarding salaries paid to executive officers with comparable responsibilities employed by companies with comparable businesses and also takes into account the Company's cash needs. In fiscal 2004, there were no increases in the base salary of the executive officers.

Bonuses. Annual incentives for the Chief Executive Officer and the other executive officers are intended to reward the attainment of annually established goals in various areas over which the individual officer has significant influence or control, including product development, product manufacturing, sales levels and others. No bonuses were paid to the executive officers for fiscal 2003 and no determination has been made to date for fiscal 2004.

Stock Options. To date, because the Chief Executive Officer owns a significant percentage of the Company's outstanding common stock, he has not been awarded options. Options have been awarded to other management employees.

Compensation of Chief Executive Officer. The compensation committee believes that the compensation of the Chief Executive Officer should reflect the Company's performance. In fiscal 2004, the annual base salary of the Company's Chief Executive Officer was not increased and remained at \$183,600. No bonus was paid to the Chief Executive Officer for fiscal 2003 and no determination has been made to date for fiscal 2004.

Section 162 Limitation. The compensation committee has considered whether any revisions to the Company's executive compensation policy may be necessary due to provisions of

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Section 162 of the Internal Revenue Code, which limits to \$1,000,000 the deductibility of compensation paid to certain executives. It is the current policy of the compensation committee to maximize, to the extent reasonably possible, the Company's ability to obtain a corporate tax deduction for compensation paid to executive officers of the Company to the extent consistent with the best interest of the Company and its shareholders.

Ronald G. Roth, Chairman John G. Reddan Stephen A. Zuckerman, M.D.

Members of the Compensation Committee

STOCK PERFORMANCE GRAPH

The following performance graph compares the cumulative total returns for the Company's common stock, The Nasdaq Stock Market (U.S.) Index and The Nasdaq Non-Financial Index for the period from March 31, 1999 through March 31, 2004. The comparison assumes \$100 was invested in the Company's Common Stock and in each index at the beginning of the period and reinvestment of dividends.

[GRAPHIC OMITTED]

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<TABLE>
<CAPTION>

CUMULATIVE TOTAL RETURN

BASE LINE

| | 3/99 | 3/00 | 3/01 | 3/02 | 3/03 | 3/04 |
|-------------------------------|--------|--------|--------|-------|-------|-------|
| <S> | <C> | <C> | <C> | <C> | <C> | <C> |
| APA Optics, Inc. | 100.00 | 419.64 | 125.90 | 38.71 | 19.00 | 35.57 |
| Nasdaq Stock Market (U.S.) | 100.00 | 215.25 | 77.53 | 60.69 | 49.47 | 82.63 |
| Nasdaq Non-Financial | 100.00 | 207.54 | 80.00 | 81.00 | 58.17 | 87.85 |

CERTAIN RELATIONSHIPS AND TRANSACTIONS

Lease for Company Facility. We have leased our principal executive office and manufacturing facility in Blaine, Minnesota since December 1, 1984 from Jain-Olsen Properties, a partnership consisting of Anil K. Jain and Kenneth A. Olsen (who are officers, directors, and principal shareholders of the Company). Certain terms of the lease are set forth in Note K of Notes to Financial Statements included in our 2004 Annual Report, which is being distributed with this Proxy Statement. The lease expires on November 30, 2004 but can be extended for at least another five years. As of the date of this Proxy Statement, the Company intends to extend the lease, with certain amendments, including options to extend through November 30, 2019. We made rent and tax payments under the lease of \$149,549 and \$138,142 to Jain-Olsen Properties during fiscal 2004 and 2003, respectively, and we are obligated to make payments in fiscal 2005 of \$102,477 in rent and taxes for the remainder of the current lease term ending November 30, 2004. We believe the current lease terms and the proposed amended lease terms are at least as favorable to us as terms we could have negotiated with an unrelated third party.

Key Man Insurance. We maintain key man insurance in the amount of \$2,000,000 on the life of Anil K. Jain, who is a director and officer. Up to \$500,000 of the proceeds of the policy is intended to be used to purchase shares of our common stock owned by the insured at the request of the personal representative of the insured's estate. The per share price for the repurchase will be the fair market value of the common stock as of the date of the event triggering the repurchase.

Split Dollar Insurance. In November 1989, we adopted a split dollar life insurance plan (the "1989 Plan") for the benefit of Anil K. Jain. Under the terms of the 1989 Plan, we pay the premiums on a \$5 million insurance policy (the "Policy") on the lives of Dr. Jain and his spouse. The Policy is a whole life, joint and survivor policy, on which all premiums are paid by us and

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income is imputed to Dr. Jain in an amount equal to the term rate for his insurance as established by the insurer. No premium payments have been made since January 1996.

The Policy is owned by the Jain Children's Irrevocable Trust dated November 28, 1989 (the "Trust"). The 1989 Plan is designed so that we will recover all premium payments and advances made by us on account of the Policy held by the Trust. Our interest in the premium payments and advances is secured by a collateral assignment of the Policy. Upon the death of the last to die of Dr. Jain and his spouse, we will be reimbursed from the insurance proceeds paid to the Trust in an amount equal to the total premiums and advances made by us. In the event the trustee of the Trust surrenders the Policy for its cash surrender value at some date in the future, we will be reimbursed for the premiums paid on the Policy.

Kenneth Olsen Severance Arrangement. Kenneth Olsen, secretary, former vice president, and a member of the Board of Directors of the Company, reduced his hours of work to 20 hours/week beginning June 1, 2003. During this time, Mr. Olsen maintained all the benefits he otherwise participated in with the Company as of June 1, 2003. The Company retained the right to recall him for increased or full time work at any time in future, if needed. In consideration of this right to recall, the Company guaranteed at least 20 hours/week work until December 31, 2003, resulting in proportional adjustments (actual hours vs. 40 hours/week) in compensation. Commencing January 1, 2004, the terms of Mr. Olsen's employment are as follows:

- Fifteen (15) months of full time salaried employment (pay rate equivalent to pay rate prior to this agreement, which is \$96,900 per year). During the term of this agreement, he will be available to APA and will not be employed elsewhere. He also has the option to voluntarily resign from his employment and take any unused portion of the compensation under the employment package as a lump sum, if he chooses.
- Mr. Olsen will not be provided any benefits at the Company's expense. However, he may participate in any standard benefit provided by the Company electing to so participate and by providing for a deduction from his compensation for the cost of the benefit or reimbursing the full amount of expenses incurred by the Company in providing the designated benefits.

- Mr. Olsen will be entitled to the balance of any unpaid compensation as a severance package if his employment is terminated by the Company prior to March 31, 2005 for any reason other than a just cause involving misconduct of Mr. Olsen.

SECTION 16(A) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Based solely upon a review of Forms 3, 4 and 5 and amendments thereto furnished to the Company and any written representations that no Forms 5 were required, the Company believes that all reports required to be filed by its officers, directors, and greater than 10% beneficial shareholders under Section 16(a) of the Exchange Act were timely filed, except for the following items. Stephen A. Zuckerman, a director, filed a report on Form 4, after the required filing date, with respect to a purchase of shares of common stock by his spouse. Dr. Zuckerman disclaims beneficial ownership of such shares. Director options, issued annually after the annual

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shareholders meeting, were granted on August 22, 2003 but were not reported on Form 4 until September 3, 2003, for directors Dr. Stephen Zuckerman and Ronald Roth, and September 4, 2003 for Jack Reddan.

RELATIONSHIP WITH INDEPENDENT PUBLIC ACCOUNTANTS

REPORT OF AUDIT COMMITTEE

The Audit Committee of the Board of Directors is comprised of three nonemployee directors. All members are independent as defined under the rules of The Nasdaq Stock Market.

The Audit Committee held 3 meetings during fiscal 2004. The meetings were designed to facilitate and encourage communication between the Audit Committee and the internal auditors and the Company's independent auditors, Grant Thornton LLP.

During these meetings, the Audit Committee reviewed and discussed the audited financial statements with management and the auditors.

The discussions with the auditors also included the matters required by Statement on Auditing Standards No. 61 (Communication with Audit Committees). The auditors also provided to the Audit Committee the written disclosures and the letter regarding their independence as required by the Independence Standards Board Standard No. 1. This information was discussed with the auditors.

Based on these discussions, the Audit Committee recommended to the Board of Directors that the audited financial statements for the fiscal year ended March 31, 2004 be included in the Company's annual report on Form 10-K.

Ronald G. Roth John G. Reddan Stephen A. Zuckerman, M.D.

Members of the Audit Committee

INDEPENDENT AUDITORS' FEES

The firm of Grant Thornton LLP, independent accountants, audited our financial statements for the years ending March 31, 2004, 2003 and 2002. Our audit committee has appointed them to serve as our auditors for the fiscal year ending March 31, 2005. Representatives of Grant Thornton LLP are expected to attend the annual meeting to answer any questions and will have the opportunity to make a statement if they wish.

The following table presents fees for professional services rendered for the two most recent fiscal years.

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<TABLE>
<CAPTION>

| | 2004 ----- | 2003 ----- |
|----------------------------|---------------|---------------|
| <S> | <C> | <C> |
| Audit fees (1) | \$62,400 | \$39,110 |
| Audit-related fees (2) | \$ 7,308 | \$ 7,450 |
| Tax fees | | |
| Tax returns and compliance | \$ 8,900 | \$ 5,560 |
| Other tax (3) | \$ 7,500 | \$ 775 |

<FN>

(1) Audit fees include fees billed for 2003, fees billed and expected to be billed for 2004 by Grant Thornton LLP for professional services rendered for the audit of our annual financial statements, the review of our

financial statements included in our reports on Form 10-Q, services in connection with registration statements filed with the SEC, and accounting consultations necessary for the rendering of an opinion on our financial statements.

- (2) Audit-related services include due diligence and other acquisition-related services.
- (3) Other tax services include acquisition-related tax structuring, tax planning, state tax planning and other tax consultation.

</TABLE>

Our Audit Committee must pre-approve all audit services, engagement fees and terms, and all permitted non-audit engagements, subject to the de minimus exceptions permitted pursuant to the Securities Exchange Act of 1934. Pursuant to its pre-approval policy, the Audit Committee has authorized management to engage Grant Thornton for tax planning and preparation and filing of the company's tax returns.

PROPOSAL NO. 2
CHANGE OF NAME

Subject to ratification by the shareholders, our Board of Directors has voted to change the name of the Company from "APA Optics, Inc." to "APA Enterprises, Inc." The name change is intended to reflect the diversification of the Company's business into several operating divisions. There will be no change in the Company's Nasdaq trading symbol as a result of the name change.

OTHER MATTERS

We are not aware that any matter other than those described in the Notice of Meeting will be presented for action at the meeting. If, however, other matters do properly come before the meeting, it is the intention of Messrs. Jain and Olsen (the persons named as proxies) to vote the proxied shares in accordance with their best judgment on such matters.

SHAREHOLDER PROPOSALS FOR 2004 ANNUAL MEETING

The Company's 2005 Annual Meeting of Shareholders is expected to be held on or about August 18, 2005, and proxy materials in connection with that meeting are expected to be mailed on or about July 11, 2005. In order to be included in the Company's proxy materials for the 2004 Annual Meeting, shareholder proposals prepared in accordance with the proxy rules must be received by the Company on or before March 14, 2005.

In addition, pursuant to the Company's Bylaws, a shareholder must give notice to the Company prior to May 20 2005 of any nominations for director or any proposal which such shareholder intends to raise at the 2005 Annual Meeting. If the Company receives notice of such

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nomination or proposal on or after May 20, 2005, such nomination or proposal will not be considered at the annual meeting.

Additionally, if the Company receives notice of a shareholder proposal after May 25, 2005, it will be considered untimely pursuant to SEC Rules 14a-4 and 14a-5(e), and the persons named in the proxies solicited by the Board of Directors for the 2005 Annual Meeting may exercise discretionary voting power with respect to the proposal.

ADDITIONAL INFORMATION

A copy of the Company's Report to Shareholders for the fiscal year ended March 31, 2004, accompanies this Notice of Annual Meeting and Proxy Statement.

THE COMPANY WILL FURNISH WITHOUT CHARGE A COPY OF ITS ANNUAL REPORT ON FORM 10-K (EXCLUSIVE OF EXHIBITS) FOR THE FISCAL YEAR ENDED MARCH 31, 2004, TO EACH PERSON WHO IS A SHAREHOLDER OF THE COMPANY, UPON RECEIPT OF A WRITTEN REQUEST FOR SUCH REPORT. SUCH REQUESTS SHOULD BE SENT TO:

APA OPTICS, INC.
Attention: Comptroller
2950 N.E. 84th Lane
Blaine, Minnesota 55449

By Order of the Board of Directors

Kenneth A. Olsen
Secretary

July 12, 2004

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APA OPTICS, INC.
PROXY
ANNUAL MEETING OF SHAREHOLDERS - AUGUST 19, 2004

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS

The undersigned hereby appoints Anil K. Jain and Kenneth A. Olsen, or either of them, proxies or proxy, with full power of substitution, to vote all shares of Common Stock of APA Optics, Inc. (the "Company") which the undersigned is entitled to vote at the 2004 Annual Meeting of Shareholders to be held at the Four Points Sheraton, 1330 Industrial Boulevard, Minneapolis, Minnesota 55431, August 19, 2004, at 3:30 p.m., Central Daylight Time, and at any adjournment thereof, as directed below with respect to the proposals set forth below, all as more fully described in the Proxy Statement, and upon any other matter that may properly come before the meeting or any adjournment thereof.

1. ELECTION OF DIRECTORS:

FOR all nominees listed WITHHOLD AUTHORITY to vote for
below (except as marked to all nominees listed below []
the contrary below) []

Anil K. Jain, Kenneth A. Olsen, John G. Reddan, Ronald G. Roth and Stephen A. Zuckerman

(INSTRUCTION: TO WITHHOLD AUTHORITY FOR ANY INDIVIDUAL NOMINEE, WRITE THAT NOMINEE'S NAME IN THE SPACE PROVIDED BELOW.)

2. CHANGE OF NAME OF COMPANY:

[] FOR [] AGAINST [] ABSTAIN

3. Upon such other matters as may properly come before the meeting.

The power to vote granted by this Proxy may be exercised by Anil K. Jain and Kenneth A. Olsen, jointly or singly, or their substitute(s), who are present and acting at said Annual Meeting or any adjournment of said Annual Meeting. The undersigned hereby revokes any and all prior proxies given by the undersigned to vote at this Annual Meeting.

THIS PROXY WILL BE VOTED IN ACCORDANCE WITH THE SHAREHOLDER'S INSTRUCTIONS. IF THE SHAREHOLDER EXECUTES THIS PROXY BUT DOES NOT PROVIDE INSTRUCTIONS, THIS PROXY WILL BE VOTED FOR THE ELECTION OF THE PROPOSED DIRECTORS.

It is urgent that each shareholder complete, date, sign, and mail this Proxy as soon as possible. Your vote is important!

Dated and Signed _____, 2004

Signature of Shareholder(s)

Signature of Shareholder(s)

Please sign as your name(s) appears above. When signing as attorney, executor, administrator, trustee, guardian, authorized officer of a corporation, or partner of a partnership, please provide the name of the entity on whose behalf you are signing and your title.

PLEASE DO NOT FORGET TO DATE THIS PROXY.